

ture in the water occurred in the square between latitude 45° to 50°, longitude 40° to 45°, where the thermometer reading was 40° on the 19th and 59° on the 20th.

FOG.

The number of days on which fog was observed was considerably below the normal over all sections of the ocean. On the Banks of Newfoundland, where the greatest amount usually occurs, it was reported on only two days, while in no other 5-degree square was it observed on more than one day.

HAIL AND SNOW.

Hail was observed on only one day, the 11th, in the square between latitude 40° to 45°, longitude 60° to 65°. Snow was reported on two days in the region between latitude 35° to 40°, longitude 70° to 75°, and also between latitude 40° to 45°, longitude 60° to 65°, while it occurred on one day in a number of squares in the western division of the ocean.

Winds of 50 mis./hr. (22.4 m./sec.) or over, during December, 1918.

Station.	Date.	Velocity.	Direction.	Station.	Date.	Velocity.	Direction.
Birmingham, Ala.	21	52	se.	North Head, Wash.	12	62	s.
Block Island, R. I.	1	60	w.	Do.	13	60	s.
Buffalo, N. Y.	1	60	nw.	Do.	19	60	s.
Do.	2	56	sw.	Do.	28	78	se.
Do.	25	60	sw.	Do.	29	54	nw.
Cheyenne, Wyo.	2	58	w.	Pensacola, Fla.	20	55	se.
Do.	3	58	w.	Do.	24	62	sw.
Cleveland, Ohio.	6	52	nw.	Pittsburgh, Pa.	6	51	nw.
Columbus, Ohio.	5	50	nw.	Point Reyes Light, Cal.	8	70	s.
Ellendale, N. Dak.	22	50	nw.	Do.	20	85	nw.
Erie, Pa.	10	55	se.	Do.	28	80	nw.
Flagstaff, Ariz.	7	50	sw.	Do.	29	74	nw.
Green Bay, Wis.	24	50	ne.	Do.	1	54	nw.
Mount Tamalpais, Cal.	5	56	se.	Sandy Hook, N. J.	1	56	nw.
Do.	8	70	se.	Do.	6	57	nw.
Do.	20	50	nw.	Do.	14	50	s.
Nantucket, Mass.	17	56	ne.	Tatoosh Island, Wash.	1	58	s.
New York, N. Y.	1	65	w.	Do.	3	50	s.
Do.	4	54	nw.	Do.	8	60	sw.
Do.	5	57	nw.	Do.	10	68	s.
Do.	6	75	nw.	Do.	10	60	sw.
Do.	14	52	s.	Do.	12	50	sw.
North Head, Wash.	3	62	se.	Do.	13	58	s.
Do.	4	64	s.	Do.	19	50	e.
Do.	8	54	se.	Do.	28	68	w.
Do.	10	74	s.	Trenton, N. J.	6	60	nw.
Do.	11	52	s.				

CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest

and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course the number of such records is smaller than the total number of stations.

Condensed climatological summary of temperature and precipitation by sections, December, 1918.

Section.	Temperature.								Precipitation.					
	Section aver. age.	Departure from the normal.	Monthly extremes.				Section average.	Departure from the normal.	Greatest monthly.		Least monthly.			
			Station.	Highest.	Date.	Station.			Lowest.	Date.	Station.	Amount.	Station.	Amount.
Alabama	50.3	+4.4	Ashville	82	11	St. Bernard	27	5.70	+1.16	Union Springs	11.13	Cochrane	2.30	
Arizona	40.5	-1.9	Sentinel	83	4	2 stations	-22	1.82	+0.60	Pinal Ranch	4.14	Yuma	0.24	
Arkansas	47.6	+5.9	Camden	88	10	4 stations	9	26	5.58	+1.60	Alicia	12.90	Helena	1.68
California	43.8	-2.9	2 stations	89	3†	Madeline	-16	31	2.10	-1.93	Crescent City	7.12	2 stations	0.00
Colorado	23.8	-1.3	2 stations	73	4†	Gunnison	-36	26	1.26	+0.30	Cumbres	3.78	Cathedral	0.04
Florida	60.9	+1.5	Homestead	90	25	Garniers (near)	23	29	3.60	+0.90	Apalachicola	15.88	Ritta	0.16
Georgia	51.6	+4.8	Glennville	82	14	Ramhurst	15	27	6.36	+2.13	Toccoa	11.62	Augusta	2.20
Hawaii (November)	72.4	+0.7	Mahukona	92	9	Waimea	50	16	9.90	+1.84	Glenwood	27.54	Puuhele, Mauri	1.96
Idaho	25.7	-0.3	3 stations	65	9†	French Gulch	-33	31	0.92	-1.20	Pri-hard	4.41	2 stations	0.05
Illinois	38.4	+8.2	3 stations	74	9†	Morrison	-1	26	3.50	+1.34	Palestine	9.53	Freeport	1.47
Indiana	39.9	+7.6	Seymour	74	17	Hammond	1	31	5.28	+2.67	Vincennes	9.17	Hammond	2.01
Iowa	32.7	+8.8	Columbus Junction	68	8	2 stations	-7	25†	1.30	+0.03	Oskaloosa	3.30	Le Mars	0.37
Kansas	35.6	+4.4	2 stations	76	8	Salina	-15	25	2.74	+1.83	Scott City	6.03	Oketo	0.94
Kentucky	44.8	+7.7	2 stations	75	10	Junction City	14	27	4.44	+0.52	2 stations	7.10	Williamsburg	2.24
Louisiana	55.1	+3.3	Donaldsonville	88	13	Calhoun	15	26	5.93	+1.31	Ifouma	13.62	Monroe	2.34
Maryland-Delaware	40.2	+6.0	2 stations	71	14	Oakland, Md.	7	29	4.23	+0.60	Union Bridge, Md.	5.43	Western Port, Md.	2.51
Michigan	30.4	+4.7	Wasepi	62	22	Humboldt	-16	26	2.84	+0.73	Allegan	5.57	Humboldt	0.86
Minnesota	22.8	+7.3	Wheaton	60	7	Hallock	-28	31	1.41	+0.58	New Ulm	3.71	Ada	0.49
Mississippi	52.0	+4.9	Greenwood	83	13	Anguilla	16	26	4.12	-1.21	McNeill	9.37	Grenada	1.60
Missouri	40.0	+6.6	Marble Hill	83	6	Warsaw	-12	26	3.21	+1.14	Poplar Bluff	8.65	St. Charles	1.21
Montana	27.3	+4.1	Boulder	80	1	3 stations	-36	31	0.53	-0.31	Trout Creek	5.40	5 stations	T.
Nebraska	30.3	+4.4	3 stations	73	4†	Kirkwood	-22	31	1.40	+0.66	Brewster	3.61	Wahoo	0.37
Nevada	27.8	-3.3	Beatty	74	3	Potts	-21	24	0.69	-0.22	Sharp	2.25	Oasis Ranch	0.05
New England	28.1	+3.1	Fall River, Mass.	64	14	Van Buren, Me.	-21	8	3.25	-0.10	Springfield, Mass.	5.09	Houlton, Me.	1.05
New Jersey	37.5	+4.6	Tuckerton	66	23	Culvers Lake	6	7	3.92	+0.07	Long Branch	4.94	Paterson	3.21
New Mexico	29.2	-3.9	Deming	73	4†	Elizabethtown	-8	25	1.62	-0.75	Mogollon Ranger Sta	4.17	Loving	0.19
New York	31.2	+4.5	Wappingers Falls	62	23	North Lake	-13	7	2.77	-0.28	Adams Center	6.51	Cape Vincent	0.48
North Carolina	46.1	+4.7	Newbern	80	9†	2 stations	9	27	5.58	+1.46	Rock House	14.34	Hot Springs	1.07
North Dakota	18.3	+5.3	2 stations	65	1†	Minot	-41	31	0.89	+0.35	Grand Forks	2.29	Lisbon	0.05
Ohio	39.3	+8.4	Peebles	72	10	London	-12	30	3.53	+0.61	Montpelier	6.24	Wickliffe	1.53
Oklahoma	42.1	+2.3	Pauls Valley	82	9	Newkirk	-10	25	3.76	+1.99	Antlers	6.25	Meeker	2.05
Oregon	34.3	-3.2	Warm Springs	70	3	Lavine	-21	31	3.25	-2.56	Astoria	11.22	Sunrise Valley	0.03
Pennsylvania	36.6	+5.5	Grove City	72	8	Ebensburg	-1	28	3.38	+0.18	Bustleton	5.74	Lawrenceville	0.90
Porto Rico	74.5	0.0	Guanica Centrale	93	18	2 stations	54	25	3.66	-1.17	Dorado	8.32	Hac. Potala	0.69
South Carolina	50.8	+4.5	Oaks	82	14	Walhalla	17	29	5.25	+1.96	Walhalla	13.41	Paris Island	1.16
South Dakota	25.9	+5.2	Howell	70	6	Pine Ridge	-25	24	1.02	+0.61	Greenmont	2.80	Lemmon	0.10
Tennessee	46.8	+7.0	Dyersburg	79	13	Erasmus	-7	27	4.29	-0.41	Copperhill	9.69	Elizabethton	1.95
Texas	49.8	+1.5	Mercedes	90	12	Dalhart	-6	25†	3.59	+1.26	Clarksville	8.36	2 stations	0.30
Utah	25.7	-0.9	Springdale	73	4	East Portal	-29	24	0.85	-0.17	Loeberly	2.99	0.2 Ranch	0.00
Virginia	42.3	+5.0	Franklin	76	14	Mineral	10	30	4.03	+0.71	Mayhurst	6.90	Swansville	2.42
Washington	34.5	+1.4	2 stations	67	4	Anatone	-10	31†	4.41	-0.20	Forks	24.47	Maryhill	0.10
West Virginia	41.0	+7.3	Charleston	74	15	Marlinton	0	30	4.41	+1.00	Terra Alta	8.14	Clay	2.61
Wisconsin	28.3	+8.0	Delavan	58	8	Solon Springs	-20	25	1.68	+0.36	Manitowoc	3.43	Prairie du Chien	0.78
Wyoming	23.6	+2.7	Crow Hill	69	14	Sheridan Creek R. S.	-34	31	0.45	-0.36	Willow Springs R. S.	1.23	4 stations	T.

† Other dates also.